

Abstract

The present invention includes systems and methods for monitoring therapeutic drug concentration in blood by detecting markers, such as odors, upon exhalation by a patient after the drug is taken, wherein such markers result either directly from the drug itself or from an additive combined with the drug. In the case of olfactory markers, the invention preferably utilizes electronic sensor technology, such as the commercial devices referred to as “artificial” or “electronic” noses or tongues, to non-invasively monitor drug levels in blood. The invention further includes a reporting system capable of tracking drug concentrations in blood (remote or proximate locations) and providing the necessary alerts with regarding to ineffective or toxic drug dosages in a patient.